

BOROUGH OF PRESTON.



ANNUAL REPORT

OF THE

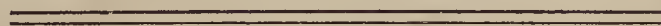
MEDICAL OFFICER OF HEALTH

TO THE

URBAN AND PORT SANITARY AUTHORITIES,

FOR THE

Year ending December 31st, 1900.



H. O. PILKINGTON,

MEDICAL OFFICER OF HEALTH,
MEDICAL OFFICER TO THE PORT SANITARY AUTHORITY.



P P

BOROUGH OF PRESTON.



ANNUAL REPORT

OF THE

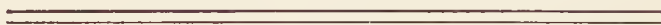
MEDICAL OFFICER OF HEALTH

TO THE

URBAN AND PORT SANITARY AUTHORITIES,

FOR THE


Year ending December 31st, 1900.



H. O. PILKINGTON,

MEDICAL OFFICER OF HEALTH,

MEDICAL OFFICER TO THE PORT SANITARY AUTHORITY.



Digitized by the Internet Archive
in 2018 with funding from
Wellcome Library

<https://archive.org/details/b29998013>

Report of the Medical Officer of Health.

TO THE CHAIRMAN AND MEMBERS OF THE HEALTH COMMITTEE.

Gentlemen,

I beg to submit my Annual Report for the past twelve months, the closing year of the Nineteenth Century. Although in a great measure this is framed upon the same lines as its predecessors, it also contains some additional matter, since there is incorporated with it a Report upon the High Death Rate of the Borough, especially amongst infants and young children.

This is in accordance with instructions received from a Sub-Committee which in March last was formed for the purpose of enquiring into the causes of the high Death Rate, and which, having met, resolved that a Report upon the subject should be drawn up and presented by the Medical Officer.

It was afterwards decided that such a Report should be incorporated with the Annual one, and though, as I have said, this renders the present Report somewhat different from those of past years, it must be remembered that every Annual Report must of necessity be—amongst other things—an enquiry into the Death Rate, an analysis of the causes which have led up to it, and an epitome of the action taken to effect its reduction and improvement. Moreover the principal aim and object of the Health Committee, since its first formation as a Sanitary Committee in 1874 has been carefully to examine the causes of the mortality within the Borough, to take note of its distribution according to age period and locality, and to institute and support those measures most likely to result in its reduction.

In dealing then with the whole aspect, causes, and conditions of this subject it is impossible to avoid a great deal of repetition, whilst the frequency and thoroughness with which it has already been discussed precludes the possibility of introducing much of a novel character, or of suggesting remedies which have not—as far as possible—already been tried.

I propose in the first place to examine the Vital Statistics for the past year, following the lines adopted in former Reports, and afterwards to deal with the general question of the Death Rate.

The year 1900 was marked by the high rate of mortality which prevailed during the first quarter, when Influenza was present in epidemic form, and the outbreak of Measles—a legacy from the previous year—attained its highest point. A considerable number of deaths were directly ascribed to Influenza, and registered under this heading, but these form but a small proportion of those fatal cases which, having their beginning in an attack of Influenza, terminated as Bronchitis, Inflammation of the Lungs, or some allied form of Respiratory Disease. During this period, so far from their being any natural increase of population, the number of deaths exceeded that of the births, whilst—excluding those deaths caused by Measles, which naturally were confined to children—the great proportion of the mortality was registered amongst adults and elderly persons. Fortunately the mortality for both the third and last quarters of the year was below the average, the Diarrhoeal epidemic being less severe, and of shorter duration, than in former years, and this in a great measure compensated for the unusually heavy death rate of the first three months.

An examination of the Tables which, together with the Chart and Plans, form the Appendix to this Report, will show that those issued by the Local Government Board are this year very different from those which for many years past have been in use.

The new Tables, if not actually drawn up by a Special Committee of the Society of Medical Officers of Health, have at any rate its approval; but whilst a change of this sort implies increased labour in the preparation of statistics, the result is not altogether satisfactory, and probably with use will follow suggestions for their revision and improvement.

The other Tables are the same as those which for many years past have appeared in my Annual Reports, uniformity in this respect enabling a comparison to be made with any previous year, or series of years.

In addition to the Plan shewing the situation of the Infantile deaths from Diarrhoea, I have added another upon which is marked the position of every death below the age of twelve months, this rapidly and clearly shows those parts of the town most closely associated with the loss of infantile life.

From Small Pox I am again able to report that not only has another year passed without a single death having been recorded, but also with absolute freedom from infection.

In several of the other large towns cases of this disease from time to time cropped up, but nowhere did the infection become widely spread.

The notified cases of Typhoid Fever numbered 162, and of these 44 terminated fatally, the deaths thus forming 27·16 per cent. of the cases of sickness.

This is a heavier case-mortality than that observable in the majority of former years, but may be accounted for by the supposition that although the actual deaths were more numerous, the reported cases were considerably below the average, and this owing to fewer doubtful cases, or cases of Continued Fever, having been included amongst the notifications. Most of the deaths occurred between the ages of 10 and 30 years, and though St. John's Ward shewed the heaviest, and Maudland Ward the lightest, fatality, the Plan giving the situation of the deaths from Zymotic causes shews that in no part of the town were the fatal cases grouped together, and therefore tends to prove the absence of any connection, or of any transmission of infection from one patient to another. Enquiry was made into the origin of each case, and an examination carried out of the infected premises; and though in sporadic cases there is often a difficulty in naming the exact cause, conditions were not unfrequently found about the premises sufficient to account for the illness.

Scarlet Fever which, after a lengthy absence, again made its appearance towards the close of 1899, continued present throughout the whole of last year. The cases of sickness reported numbered 504, and of these 32 proved fatal, so that the deaths formed 6·34 per cent. of the notified cases. However mild the type of disease may be, an outbreak of Scarlet Fever such as this, extending over a lengthened period, (and at the time of writing it is still widely spread) must not only cost a considerable number of lives, as a direct result, but there is reason to fear that in after years its influence may be perceived in constitutions weakened and rendered liable to disease. Unfortunately many parents do not recognize this fact and so often congratulate themselves upon the mild attack from which their children have suffered, and upon their rapid convalescence, forgetting the dangerous period of "skin peeling," and the liability of the patient to take cold and develop kidney disease. Undoubtedly many children die from the "sequelæ"—the after effects—of Scarlet Fever, while others live on, but with constitutions weakened, and with a predisposition to disease which must greatly handicap them in the future battle of life.

St. Peter's Ward showed the heaviest mortality from Scarlet Fever, whilst within the limits of St. John's Ward not a single fatal case was recorded.

Measles which had been present in the town during the last two months of 1899 proved exceedingly troublesome during the early part of the past year, and was the cause of

121 deaths, all occurring under the age of 10 years. The epidemic followed the course previously observed in those of former years, commencing in Maudland and St. Peter's Wards it afterwards swept through Park, Fishwick, and St. John's Wards, the last fatal cases being recorded in the early part of May.

As always happens with an outbreak of Measles, the attendance at the Public Schools was very greatly interfered with, and the question was on several occasions raised as to the advisability of closing them.

Such a course could however be productive of no good, under such circumstances as those attending the epidemic in question. The children, kept away from school, would simply have had free communication with each other in the streets and at each others homes, and the very object of the proceeding would thus have been defeated.

Moreover, as regards a considerable proportion of the children affected, Medical assistance is not called in, or is only sought when the condition of the patient, probably from some of the after effects rather than from the disease itself, is such as to raise serious doubts as to its ultimate recovery. Notification is not compulsory in the case of Measles nor for the reasons given could it serve any practical good purpose. In the case of Scarlet Fever it is by no means uncommon, on visiting an infected house, to find another member of the same family in the peeling stage, concerning whom there has been no Medical attendance, and therefore no report.

It is these so called trivial cases which do so much mischief, which play such an important part in the spread of infection, and which do so much to neutralize all efforts to check the course of an epidemic. And much of this evil springs from a want of thought on the part of parents, from a selfish disregard for the safety of others, and from a feeling that their own convenience and comfort must be secured even at a risk to the health, and it may be the lives, of their neighbours family.

In dealing with this epidemic of Measles recourse was therefore not had to the actual closing of the Schools, although in many cases there was an extension of the holidays, or a temporary closing for a week in order to admit of the class rooms, cloak rooms, &c., being thoroughly disinfected and cleaned.

Notices were issued to the teachers and managers calling their attention to the danger of admitting children who, whilst themselves apparently well, were exposed at home to the danger of infection, and asking them to exclude all such from attendance.

When enquiring into the notified cases of Scarlet Fever it was not uncommon to find that the child affected was only just recovering from an attack of Measles, and in such cases there was naturally an increase of danger, both to the patient from the exhausting effect of two closely consecutive diseases, and to the public from the tedious length of the two illnesses leading to a disregard of necessary isolation, especially during the time of convalescence.

Like its predecessors, the past year was marked by an unusual amount of Diphtheria, 108 cases of sickness having been reported, of which number 42 terminated fatally, forming a case mortality equal to 38·88 per cent. Many of the cases were of a severe form, and not unfrequently it was found that death had occurred before the date of notification, or before the receipt of the certificate. The early part of the year showed the greatest mortality from this as from the other forms of Infectious disease, although there was a recrudescence in September, about which time the disease was very prevalent in many of the other large towns.

Although the mortality here from Diphtheria was much above the average, it was greatly exceeded in Sheffield and Leicester, in both of which towns the disease had been prevalent during the whole of the previous year of 1899. Amongst the neighbouring towns which suffered more severely than Preston were Blackburn and Salford, whilst in Wales, Swansea and Cardiff, and further south Portsmouth and Brighton all showed a greater proportion of fatal cases.

No satisfactory explanation has yet been given for the increased amount of Diphtheria which, during the last two or three years, has been observed throughout the country; its simultaneous appearance in many of the large towns precludes the idea that it has been transferred from one to another, whilst, although no doubt the Schools have been one factor in the spread of infection, the general distribution of the disease over all parts of a town would seem to show that it has not arisen, or been fostered, by any local conditions.

As already pointed out, the Diarrhœal outbreak, although commencing somewhat earlier than last year, was much less severe in its effects, and to this must be attributed the reduced mortality of the third quarter of the year. The deaths rose rapidly in the first week of August, but the highest point was reached in the fortnight formed by the last week of that month and the first week of September, the period which, as a glance at the charts of former years will show, is the one most frequently associated with the greatest mortality from this cause. At this time 45 deaths were recorded, or not much more than half the number for the corresponding period of 1899.

The epidemic lasted from the beginning of August to the first week of October, and during this time 170 fatal cases were recorded, the Diarrhœal mortality for the whole twelve

months being represented by 199 deaths. Of these 163 occurred in infants and a further 23 in young children, leaving only 13 to be distributed amongst adults and persons of advanced age. As regards the situation of the various deaths, Christ Church Ward and the better part of Maudland Ward again escaped with comparative immunity, as did also St. John's Ward, a condition which, as regards the latter district, may not unfairly be attributed to the large amount of sanitary work recently carried out in that locality.

Before the actual appearance of the epidemic, but when the earth temperature, at a depth of 4 feet, was approaching 56 degrees, and so giving warning that its advent might shortly be expected, it was decided that there should again be a distribution of Cards giving instructions for the Management and Feeding of Young Children, and the Prevention of Diarrhœa. And in order that the attention of parents might be more closely directed to these Cards, and the advice therein contained rendered the more effective, it was arranged that the work of distribution should be carried out by the Sanitary Inspectors during the evenings, and in their respective districts.

This was accordingly done, especially in those localities where in former years the Diarrhœal mortality has been excessive, the Inspectors delivering the Cards, explaining or reading over their contents, seeing that they were placed in a suitable and prominent position, and in some instances personally affixing them to the kitchen walls.

It is to be hoped, and indeed it may reasonably be supposed, that this course of procedure had not only its immediate effect in reducing the Diarrhœal mortality, but that the instruction thus conveyed as to the Management of Young Children will not be without good results in the future.

The death rate from Diarrhœa amounted to 1·67 per thousand of the population, and was the highest of any of the large towns with the exception of Hull, although in Manchester, Salford, Liverpool, Leicester, Wolverhampton and some others, this figure was very nearly approached.

Hitherto there has been a want of uniformity as regards the registration of Diarrhœal deaths, and the fact that here all doubtful cases have been classified under this heading may to some extent account for the high position which Preston always holds in this respect.

The subject has recently been considered by a Committee of the Royal College of Physicians, and with a view to secure uniformity of registration, they advise that the terms Epidemic Enteritis, Zymotic Enteritis, or Epidemic Diarrhœa shall be used for those cases which arise suddenly during the Summer or Autumn months, which may be looked upon as

preventable, and in which Diarrhœa is the chief—if not the only—pathological indication. Where however Diarrhœa is but an adjunct to some other disease, the latter should be certified as the cause of death, and the term Diarrhœa either added as a secondary symptom, or else altogether omitted from the certificate.

A Memorandum on this subject was issued by the Incorporated Society of Medical Officers of Health, in order to call the attention of Medical Practitioners to the decision arrived at by the College of Physicians, and I caused a copy of this to be forwarded to each Member of the Medical Profession.

As the season when Zymotic Diarrhœa may be expected is now not very far distant, I take the present opportunity of again directing attention to this very important matter, since the value of any comparison made between the mortality of one town and that of another must in a great measure depend upon a uniform and regular system of certification.

Whooping Cough was the cause assigned for 64 deaths, of which 47 occurred under the age of 2 years, and the remaining 17 between that and the age of 10 years. It was present during the epidemic of Measles in the early part of the year, gradually abating during the Summer, but again re-appearing towards the end of August, from which time it continued fairly prevalent until the close of the year. The deaths represented a rate of .56 per thousand, a mortality higher than that recorded in the majority of the large towns.

Up to the close of 1899, notification of Infectious disease was rendered compulsory by Part VII of the Preston Improvement Act, 1880, but with the commencement of the following year this was superseded by the Infectious Diseases (Notification) Act, 1899, the adoption of which was then required by all Municipal Authorities. The most important difference between the two Acts is that the one now in force provides for the payment of any number of certificates relating to different cases of the same disease occurring in a given house; whereas, by the previous one, a second case of the same disease was not paid for, and need not be certified, if it appeared within one month of the case first notified in that particular dwelling.

Naturally under the new regime the number of certificates has increased, although this does not necessarily imply an increased amount of notifiable disease. The case mortality—*i.e.* the percentage of deaths to reported cases of sickness—must also be affected, especially with regard to such a disease as Scarlet Fever, since with the imperfect isolation afforded by an ordinary cottage house, it is not uncommon for several—if not all—of a large family of children, to suffer from the same epidemic.

From the above diseases, viz.:—Typhoid and Continued Fever, Scarlet Fever, Measles, Diphtheria, Whooping Cough, and Diarrhœa, a total Zymotic Death Rate of 4·36 per thousand, was recorded, of which, as already shown, 1·67 was caused by Diarrhœa, leaving 2·69 as the result of what may be classed as the Infectious Fevers.

From time to time, in former Reports, I have dealt with the want of Hospital accommodation, in which diseases of this class may be isolated, both for the benefit of those patients who cannot obtain proper nursing and attendance at their own homes, and for those cases where, from want of sufficient accommodation, the non-removal of patients implies a risk of infection to the other members of the family, or to the Public.

The accommodation provided by the Harris Infectious Wards, in connection with the Royal Infirmary, always limited, and of late years gradually reduced, was, about the middle of the past year, altogether withdrawn, in consequence of the space being required during the extensive alterations and improvements which are being carried out in the main building. In the first six months of the year I made use of the Harris Wards for the isolation of 11 cases of Scarlet Fever, and 1 of Diphtheria, but about June, I received notice that, after that date, no further case could be received.

For Small Pox there is ample provision in the Ducker Hospital, erected at Holme Slack, which, although only a temporary building, has with care and watchfulness, and at a small expense, been maintained in efficient working order. Fortunately it has not been required since 1893, but at any time its services might be called into requisition.

In view of the Cholera Epidemic of 1893, the Port Sanitary Authority were required to make provision for the possible introduction of this disease by incoming Vessels, and as a consequence the commodious and well arranged Hospital to the North side of the Dock Basin was erected.

This was however built for a specific purpose, and must be retained for that purpose, whilst its situation would prevent its being used as a General Infectious Hospital.

The Workhouse Authorities refuse—as no doubt they have a right to refuse—to receive within that Institution any case of an infectious nature, no matter how destitute and uncared for the patient may be. As a consequence the town is at present without the means of isolating a single patient suffering from any infectious disease, other than Small Pox or Cholera, no matter how inconvenient the retention of the patient at home may be to the householder, how much opposed it may be to the chances of the patient's recovery, or to what extent it may be fraught with danger to the Public Health.

For some time past this matter has received the earnest and serious attention of the Health Committee, and, as stated in my last Annual Report, a Sub-Committee has been appointed to consider the whole question, and advise as to the erection of an Infectious Isolation Hospital.

In the discharge of their duties this Sub-Committee during the past year has visited various towns, selecting those in which Hospitals of this class have recently been erected, and where the most modern plans of construction and equipment might be studied and learnt. As this will, no doubt, form the subject of a special report, nothing further need at present be said, except that the investigations of the Sub-Committee confirm what I have already pointed out, viz.:—that the erection and maintenance of such an Institution must entail a considerable initial cost, and be followed by a constant annual expenditure.

The deaths from Bronchitis numbered 369, and were in excess of the average for previous years. Inflammation of the Lungs contributed a further 174 deaths, and this also is a greater number than has generally resulted from this disease. As stated at the commencement of this Report, it was in the early part of the year that diseases of this class were exceedingly prevalent, and it was then that a great number of these deaths were recorded.

The epidemic of Influenza attained its height towards the end of February, and in the week ending February 17th, the total deaths from all causes represented a yearly rate of 48·10 per thousand, or, with the addition of the Workhouse deaths, the unusually heavy rate of 54·80 per thousand.

Many of the weekly returns during the first quarter of the year showed that the Deaths were in excess of the Births, so that for a time, in place of a natural increase there was an actual diminution in the population. Much of the mortality occurred amongst elderly persons, or those who were suffering from some form of organic disease, both classes being especially susceptible to the influence of unfavorable climatic conditions.

The deaths caused by Pulmonary Tuberculosis—Consumption—amounted to 154, and this number, allowing for increase of population is very much in accord with the average of former years.

The next cause of death is one which, apart from any seasonal conditions, or the influence of any epidemic, year after year furnishes a large proportion of the total mortality. Under this heading are grouped a number of deaths, registered as Premature Birth, Immaturity, Atelectasis, Debility from Birth, &c., and which may be classified as Diseases

of Infantile life. From these combined causes 596 deaths have been recorded, of which 461 were those of infants under the age of twelve months, 64 those of children between the age of 1 and 2 years, and the remainder those of children of somewhat older growth. In many instances the infant has been ushered into the world in such a feeble condition that the span of its life has been reckoned not by days even, but by hours. In such cases it is evident that death has resulted, not from any disease contracted, or accident met with, after birth, but from inherent debility, transmitted from the parents, and due on their part to some fault of constitution, or error in mode of living. In addition to these deaths from purely Infantile diseases, it has already been shown that many of the Deaths from Measles, Whooping Cough, Diarrhœa, and Bronchitis were registered under the age of 12 months, so that the total mortality under the age of one year is increased to 814, thus forming 30·80 per cent. of the deaths from all causes, and at various age periods. But still more important and conclusive evidence as to the part which the Infantile mortality plays in the production of a high general death rate, is afforded by an analysis of the position in which it stands to the number of Births.

This is now accepted as the standard of Infantile Mortality, and by means of it a comparison may be made as to the rates which have occurred in various years, and also as to the relative position in which, in this particular respect, one town stands with regard to others. In Preston, during the past year, 236 children died out of every thousand born, a number considerably in excess of that recorded in any of the other large towns, Blackburn coming the nearest with 220, while in Salford, Burnley, Wolverhampton and Sheffield alone did the rate exceed 200 to each thousand births.

To this great mortality amongst the very young the high death rate of Preston is mainly attributable, and whilst the general mortality has of late years satisfactorily improved, the Infantile deaths have, on the contrary, increased. This is shown by a comparison of the general death rate and the infantile death rate—as measured by the deaths of infants under the age of 12 months to every thousand births—during the past twenty years, divided into periods of five years :—

Year.	General Death Rate.	Infantile Deaths per 1,000 Births.
1876-80	27·42	...
1881-85	24·73	208
1886-90	26·23	229
1891-95	23·16	235
1896-1900	20·80	236

Now the causes which combine to bring about this great loss of Infantile life may in the first instance be divided into two classes, those which operate before the birth of the child, so that it is brought into the world puny, diseased, and hardly viable, and those which take effect during the first few months of its life with the result that its death is registered as due to Diarrhœa, Marasmus, Bronchitis, or the like. In the first class must be placed early marriages, especially between people whose progenitors for generations back have followed the same employment in the same town—inter marriages between cotton weavers. To this must be added the employment of female labour in the mills—not necessarily an evil, but rendered one by the fact that so many mothers follow their occupation until within a very short time of parturition. This general employment of the mothers must also be placed as one of the causes in the second class, since the too early return of the mother to her work deprives the child of the nursing and natural feeding so essential to its well being during the first few months of its existence, and exposes it to all the dangers attendant upon the nursing out system in a cotton manufacturing town. And these dangers await upon it the whole day, from early morning when it is removed from a close ill ventilated bedroom through the cold air of the streets to be deposited in the care (!) of some elderly woman, whose nursing and feeding arrangements date back to the dark ages, but whose experience of sickness amongst children—undoubtedly and unfortunately a large one—enable her to pose as an authority on these subjects in the neighbourhood.

If even the child—as no doubt is frequently the case—receives kindly treatment and attention, and is not drugged with one of the many so called “Soothing Syrups,” it too often falls a victim to food unsuitable, ill-kept, or badly prepared; and this not only at the house where it is nursed during the day time, but also at its own home, where through mistaken kindness, and while yet a toothless infant, it is regaled with such things as shell fish, tripe, tinned salmon, and pigs feet.

If it be fed upon milk, and this be obtained pure and wholesome in the first instance, sufficient care is not taken to see that it is kept free from contamination, and that the feeding vessels, especially the bottle so frequently used—are kept scrupulously clean and sweet.

There are in every large town, and probably always will be, a certain number of houses where the wonder is that any infant can survive its nursing period, but it is lamentable to see how, in the homes of better class operatives, infantile life is frittered away, and this apparently from want of a little knowledge or of attention to ordinary precautions.

The evils of large middensteads in which all kinds of putrescent matters are stored up near to dwelling houses, and of badly paved yards permitting the germs of disease to escape from a filthy subsoil into the open air and thence into the kitchens and pantries, have in

former Reports frequently been dilated upon as important factors in the causation of such diseases as Infantile Diarrhœa, and it is by reforms in this direction that a Health Committee can best improve the health of the community, and so lower both the General, and the Infantile mortality.

During the past year a great deal of useful work has been done in this direction, and the power to require the flagging of badly paved back yards, obtained by the Corporation in its Bill of 1900, has been freely, but discretely exercised. This last named improvement has been too recently obtained to enable anyone as yet to speak of the results, but it may safely be predicted that before many years have passed it will have a markedly beneficial effect throughout the Borough. In addition to the conversion of a large number of privies into water-closets—532—certain houses and cellars have been condemned as unfit for human habitation. In some instances the requisite alterations could be made, and they were again rendered fit for occupation, but, where the structural conditions prevented this, they were closed. In explanation of the fact that all these dwellings had undergone inspection some considerable time since, and had then been allowed to remain, it must be pointed out that not only is there, very properly, at the present day, a higher standard of Sanitary requirement, but that the population in many parts is becoming denser, and that the buildings themselves have suffered and deteriorated with the lapse of time. Of the property owners generally, it is but fair to say that, with few exceptions, there is amongst them, a feeling that the alterations required by the Sanitary Authority are necessary and beneficial, with a disposition thoroughly to carry out the requirements of the notice, and even in some instances to anticipate them.

Improvement in the houses and surroundings of the people is one, and the most efficient, of the methods by which the Authority can improve the health and reduce the mortality of the town, and it is on this account, whilst speaking of the death rate, I have introduced the sanitary work accomplished during the year.

But beyond this, much depends in every house upon the care and the cleanliness of the inmates of that house, and though I do not believe in every man being his own Doctor, or his own Lawyer, I think he might be, and he ought to be, his own Sanitary Inspector. To this extent at any rate, that the head of every household should attend to the sanitary condition of his own premises and family, or if he be an employer of labour, to the health and wellbeing of those under his control. It has frequently been observed that during an epidemic of Small Pox—a disease which exercises but an inappreciable effect upon the mortality, but of which most people have a wholesome horror—the general death rate is lowered, and this on account of the precautions that are taken, the frequent use of

disinfectants, and the more rigid observance of cleanliness and the laws of health. If this can be done at one time, so it can at another, but unfortunately as the panic passes, so does the wave of household sanitation.

The remaining deaths, their causes, localities, and the ages at which they occurred are all set forth in the appended Tables, from some one or other of which all requisite information may be obtained.

The total number of deaths recorded throughout the year was 2636, or at the rate of 22·16 per thousand of the population, the latter being estimated at 118,902. As regards locality, Park Ward shewed the highest rate—23·49—St. Peter's, Fishwick, and St. John's were all a little in excess of the average for the whole town, while Maudland—18·08—and Christ Church—17·05—were alike below it, the last named Ward again shewing the best return.

The Births numbered 3410, equivalent to a rate of 28·67 per thousand, exceeding the deaths by 714, the amount of natural increase for the year.

These figures represent a still further falling off in the number of births, the rate being even lower than that for the previous year, which was itself the lowest that up to that date had been recorded. This reduction in the Birth rate, which for some years past has been going on throughout the Kingdom, may to some extent during the last year be attributable to the War in South Africa, but still more I believe (quoting from my last Report) "to that pernicious teaching, which as literature, and in other forms, has of late years invaded the country."

In the different Wards the rate varied from 31·73 in St. Peter's to 20·78 in Christ Church Ward, the latter thus showing the lowest rate for Births as it did for Deaths. Possibly the Census, just completed, by shewing the true population of the various Wards, may alter their relative positions; it will at any rate for a time, render the statistics more exact and reliable.

This is the last Report which will deal with the Wards as just described, since with the commencement of last year their number was increased from six to twelve, thus necessitating a rearrangement of the four Sanitary Districts. These have now been arranged, three Wards having been allotted to each Inspector, and so far this division of labour has worked well, and promises to be successful.

Before concluding with the subject of the Death rate, it may be well to point out that while certain of the tables deal only with the mortality which actually took place within

the Borough, others include—as in the Registrar-General's returns—the deaths occurring at the Workhouse, and in Table IV_A these are entered in the column “Deaths of residents outside the Borough.”

The deaths in Public Institutions refer to those returned from the Royal Infirmary, St. Joseph's Hospital, and H. M. Prison.

And when considering the Death rate of Preston, especially as compared with other towns, it must be remembered that while the latter have of late years taken every opportunity of extending their boundaries, annexing the suburbs, and so increasing their population and raising their position, Fulwood still remains apart from Preston, and so the town loses the benefit of a good class population whose business life is spent in the town, and whose residences practically form part of the town. Moreover Preston is not credited with the population of the Workhouse, although the deaths in that Institution—200 during the past year—are added to her list of mortality as published in the Registrar-General's Returns, the figures from which comparison most frequently is made with other towns.

In addition to the conversion of the privy midden system to that of water carriage, and the closing of insanitary property, a large amount of useful work was accomplished during the year, particulars of which are set forth in Table No. 11.

In the case of 21 of the Public Schools, the system of drainage was carefully examined, and where defects were found to be existing they were, if the requisite authority was obtained, at once made good, or else a complete report was forwarded to the Managers pointing out the evils, and suggesting the means for their remedy. It is satisfactory to know that in all cases these representations received due attention, and the necessary work was carried out.

In addition to the examination of these Schools, the drainage of 151 houses, in many of which recent illness had occurred, was similarly tested.

With the completion of the additional portion of the Public Abattoir, it became possible to revise the Register of Slaughter-houses within the Borough. This was done, and the requisite notices were served requiring the closing of 31, which for various reasons were quite unfit to be used for the slaughter of animals intended to be used as human food.

Besides these, 37 others in which the conditions and surroundings were equally defective, were voluntarily closed by the owners, making a total of 68 which were thus permanently done away with.

By this means not only were a great many localities freed from nuisances, at once annoying and detrimental to health, but a thorough and satisfactory meat inspection was rendered possible.

Certain private Slaughter-houses—27 in number—which it had been decided could be rendered fit for use, and which had complied with specified alterations, were duly licensed; subject to certain regulations, non-compliance with which would render them liable to a revocation of the license.

This was the last act in the great Slaughter-house question, which for so many years has occupied the attention of the Corporation, and which has at length, although by somewhat tardy steps, been brought to a satisfactory conclusion.

It is also satisfactory to know that the great advantages offered at the Public Abattoir for the killing of animals, and the cooling and storage of the meat; are gradually becoming better appreciated, and that as a consequence greater demands are being made upon its resources.

The meat, voluntarily submitted for examination and pronounced unfit for human consumption, amounted in the aggregate to 101,744 lbs. weight. The whole of this, together with 8086 lbs. of Fish, and 760 lbs. of Fruit was removed, and dealt with at the Public Destructor.

No seizure was made of diseased or unwholesome articles of food, about which proper notice had not been given, and therefore in no instance was it necessary to take further proceedings.

The Common Lodging Houses have been regularly inspected, in order to ensure their being kept in a clean and sanitary condition, as well as to guard against the introduction, through their agency, of infectious disease into the town. Advantage has been taken of every opportunity to secure an improvement in their structural arrangements, or general condition and equipment.

There has been no increase either in the amount of traffic carried on by means of the Canal, or in the numbers of boats upon the Register. The resignation of Inspector Hardman, in order to take the post of Markets Inspector, has necessitated a change in the appointment of Canal Boat Inspector, and the duties are now taken over by Inspector Livesey, in addition to his supervision of No. 4 District.

The Annual Report, required by the Canal Boats Act, 1884, has some time since been forwarded to the Local Government Board.

In Table No. 6, are set forth particulars of the various substances purchased and submitted for analysis under the Food and Drugs Adulteration Act.

Besides these—155 in number—an additional 68 were purchased at the request of the Government, in order to ascertain to what extent—if any—preservatives had been employed in their manufacture. The result as regards these last named articles has not yet been received.

Of the various samples purchased and analysed in the ordinary course of procedure, the greater part proved to be of good quality and genuine composition. Particulars of those which were either deficient as regards their constituents, or adulterated with some foreign substance, together with the action taken, and the result, are all duly set forth in the Table referred to. Where the article fell but little short of the proper standard, a letter of caution to the vendor was considered sufficient, and in four of the cases this was the course adopted.

In seven instances prosecutions were carried out, and in each case a conviction was obtained, fines varying from 5/- to 20/- being inflicted. The most important of these were four Milk cases, where the low percentage of fat pointed to the abstraction of some of the cream. After various adjournments for the attendance of the Analyst, and the examination of the third portion of the sample in the Government Laboratory, a conviction was obtained in the principal case, and a fine of 20/- and costs imposed. In the remaining three cases, where the offence was more of a technical nature, it was considered sufficient to withdraw the charge upon payment of costs, which in all four instances were necessarily somewhat heavy.

Towards the close of the year attention was directed to the Beer supply, in consequence of the detection of Arsenic in that supplied by several of the large Lancashire breweries. In one case only was the poison found to be present in anything like serious quantities, and the whole of the stock from the Firm implicated was at once sealed up and withdrawn from use. Afterwards, with the consent of the Firm, who gave every assistance in the matter, the Beer was destroyed. An examination of the mortality returns did not give evidence that lately there had been any increase in the deaths caused by Alcoholism, or Peripheral Neuritis; and an enquiry amongst the Medical Profession, engaged in Club, Union, or General Practice did not elicit anything tending to show that any recent death had been caused by Arsenical poisoning. Still, in view of the serious results observed in other towns, the matter was of sufficient importance to warrant further investigations, and, up to the present time, these are still being carried out, with a view to protect the public from the dangers of Arsenical Beer.

In only two instances was it necessary to take proceedings for non-compliance with

notices served ; one for the abolition of an offensive middenstead, the other for the closing of an underground bakehouse. In both instances, after some delay, the necessary work was done, and the summonses were withdrawn upon payment of costs.

During the year a great deal of progress has been made towards the sett-paving of the principal roadways, and the flagging of the footpaths. The work done in these respects is represented by 32,683 and 31,690 square yards. Although this comes within the department, and under the control, of the Borough Surveyor rather than of the Health Department, the duty of making out and serving the necessary notices devolves upon the Sanitary Inspectors, and since the work tends to improve not only the appearance of a town, but the health of its inhabitants, it may fittingly find a place amongst the records of Sanitary improvements. A systematic examination of the Sewers has also been commenced, attention being in the first place given to those localities in which there was reason to suspect they were defective, and where either from deficiency of calibre, or want of proper fall, they became silted up, or, especially during heavy rainfall, failed to carry off the water with which they had to deal. And while one may very properly be proud of the traditions and history attached to an ancient town like Preston, it must not be forgotten that with age there must come a certain amount of decrepitude, and that in many respects—of which drainage is not the least important—an old town cannot compare with one having a shorter history but more modern equipment.

The improvements shortly to be carried out at the large Destructor on the Marsh, and those contemplated with regard to that situated off St. Paul's Road, will be of the greatest benefit, since they will enable the solid refuse of the town to be more promptly and scientifically dealt with. The whole of the liquid sewage is conveyed to the Freckleton Farm, there to be utilised for agricultural purposes—the improvement of the land, and the production of crops—but the problem of dealing with the solid matters—the contents of middensteads, dry ashpits, and ashpails—has always been one difficult of satisfactory solution.

The old system of “tipping” is now universally and strongly condemned by all Sanitary experts, and if even it were allowable, the difficulty of finding a suitable situation in the neighbourhood of a large town, must year by year be increased.

The temptation thus arises of getting rid of this solid refuse by depositing it upon any vacant piece of ground, where it not only causes an immediate nuisance, but may do incalculable harm in the future, when, with the growth of the town, this land is called into use for building purposes.

Its complete destruction by fire, or rather its reduction in bulk, and resolution into various substances—harmless, and useful for different purposes—is the only safe and legitimate method of dealing with it.

This process may entail expense, but it is the best, and for the reasons given will in the long run be found to be the cheapest.

Considerable improvements have also been effected in the Scavenging department. All the streets receive more frequent and regular attention, while the main thoroughfares are swept each night, and hand scavenged during the day time.

The probable erection before very long of Markets for Fish, Game, Poultry and Butter will supply a long felt want, since the accommodation at present afforded is at once inadequate and insanitary.

The town's water supply was throughout the year ample in quantity, and, as shown by both Chemical and Bacteriological Analysis, pure and wholesome in character. The storage capacity has been increased to the extent of some 74 million gallons, thus affording increased protection against those seasons of drought which, in this uncertain climate, may at any time occur.

At the beginning of August I had, in company with the Chairman, the advantage of attending the Congress of Public Health, held in the City of Aberdeen. Many interesting addresses were given, papers read, and discussions opened on matters of the greatest possible importance to Sanitarians and those engaged in the service of Public Health.

H. O. PILKINGTON,

April 11th, 1901.

MEDICAL OFFICER OF HEALTH.

PORT SANITARY.

In Table No. 12 is given a return of the work done by Inspector Baron during the past year amongst the Vessels—Steamship and Sailing—which have come within the boundaries of this Port Sanitary Authority.

The number of vessels inspected is much the same as that for the previous year, and the defects which have been dealt with present no unusual features, being those most frequently met with, often the result of a want of care on the part of the Officers or Crew, and therefore capable of being put right as soon as attention has been drawn to them. Where structural alterations have been required, these have been carried out by the owner or agent, either during the vessel's stay in Port or on the first available opportunity.

The continued presence of Plague abroad, and its introduction into some of the Home Ports, necessitated a close watch being kept upon all vessels trading from foreign countries, but fortunately nothing of a dangerous, or even suspicious nature was met with.

I received notice from other Port Sanitary Authorities of the arrival in Preston of passengers who had landed from vessels on board of which cases of Plague had occurred during the homeward voyage. These were kept under observation, but in no case did anything occur calling for interference.

A case of Typhoid Fever broke out amongst the occupants of the Pilot Boat, stationed near the mouth of the river. The patient was brought up to the Dock, and thence transferred to his own home, where unfortunately the disease terminated fatally. Before leaving to again take up her station, the boat was fumigated, and her bilges and water tanks emptied and disinfected.

Another case of Typhoid Fever was also reported on board a large steamer arriving with a cargo of grain from Rosario, South America. The patient—first mate of the vessel—had apparently been well attended by the Captain, and though very weak was convalescent on arrival. Although hardly strong enough for the long journey, he left in the course of a day or two for his home in the South of England, after which the vessel was disinfected.

The Boghole at Southport is now included in this Port Sanitary District, and certain vessels anchor there for the purpose of being lightered, or of awaiting a tide which will enable them to come up the river to the Dock or Quay side. Although none of these had sailed from infected Ports, they were, as a matter of precaution, boarded whilst still at Southport, but in no instance was any case of sickness found on board.

H. O. PILKINGTON,
Medical Officer of Health.

April 11th, 1901.

TABLE No. 1.

Number and Causes of Deaths at different Ages, for the Year ending December 31st, 1900.

Cause of Death.	Under 1 year.	1 to 2	2 to 5	5 to 10	10 to 15	15 to 25	25 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	90 to 100	Total.	Year 1899	Year 1898	Year 1897	Average for 6 years
Small Pox .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...
Fever .....	...	...	1	9	5	14	5	5	5	...	...	...	...	44	37	42	35	33.83
Scarlatina.....	1	5	18	6	...	2	...	...	...	...	...	...	...	32	11	4	5	9.84
Measles.....	26	47	40	8	...	...	...	...	...	...	...	...	...	121	41	1	282	82.36
Diarrhœa	163	19	3	1	...	...	3	2	1	3	4	...	...	199	298	279	294	248.17
Whooping Cough	23	24	15	2	...	...	...	..	...	...	...	...	...	64	53	48	30	46.63
Diphtheria	3	5	27	6	1	...	...	...	...	...	...	...	...	42	36	8	4	17.50
Croup	2	7	9	2	...	..	...	...	...	...	...	...	..	20	33	10	16	19.34
Consumption .....	...	...	...	3	6	26	63	32	18	6	...	...	...	154	140	128	151	147.36
Bronchitis	96	36	26	7	1	3	12	19	35	83	40	11	...	369	315	240	293	295.67
Inflammation of Lungs	27	21	17	3	1	9	31	25	21	12	6	1	...	174	136	120	155	155.00
Teething, Convulsions, Pre- mature Births, & Debility }	461	64	53	17	1	...	...	...	...	...	...	...	...	596	566	514	592	577.83
Old Age .....	...	...	...	...	...	...	...	...	1	14	46	24	2	87	99	61	104	87.14
Violence, &c.	6	1	4	2	3	6	8	5	4	5	5	..	...	49	64	49	59	55.66
Other Diseases	6	1	9	14	21	46	91	101	129	172	77	18	...	685	663	603	667	663.87
Total.....	814	230	222	80	39	106	213	189	214	295	178	54	2	2636	2492	2107	2687	2440.20

TABLE No. 2.

Number and Causes of Deaths in each Month of the Year ending December 31st, 1900.

Cause of Death.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Small Pox .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever.....	4	2	2	5	1	1	1	1	8	5	5	9	44
Scarlatina	8	3	1	2	3	3	2	3	3	...	2	2	32
Measles	36	31	36	14	3	...	...	...	...	...	1	...	121
Diarrhœa	2	3	4	1	...	4	11	72	78	20	1	3	199
Whooping Cough.....	5	4	6	3	2	3	...	5	12	5	8	11	64
Diphtheria	7	7	3	5	2	2	...	2	7	1	4	2	42
Croup	3	2	2	1	1	3	...	2	...	2	3	1	20
Consumption.....	15	19	12	13	7	9	10	18	13	7	14	17	154
Bronchitis	45	73	53	43	17	25	14	11	20	17	17	34	369
Inflammation of Lungs ...	16	14	24	19	21	21	6	8	10	8	14	13	174
Teething, Convulsions, &c.	46	61	76	50	42	39	43	51	62	41	45	40	596
Old Age	11	11	10	12	6	7	2	2	4	5	7	10	87
Violence, &c.....	5	3	7	2	7	3	2	9	5	2	2	2	49
Other Diseases.....	64	109	68	63	48	45	45	48	59	42	36	58	685
Total	267	342	304	233	160	165	136	232	281	155	159	202	2636

TABLE No. 3.

Number and Causes of Deaths in each Ward, for the Year ending December 31st, 1900.

Wards.	Small Pox.	Fever.	Scarlatina.	Measles.	Diarrhoea and Dysentery.	Whooping Cough.	Diphtheria.	Croup.	Consumption.	Bronchitis.	Inflammation of Lungs.	Teething, Convulsions, Premature Births and Debility.	Old Age.	Violence, &c.	Other Diseases.	Total Deaths.	Rate per 1000 per annum.	Total Births.	Rate per 1000 per annum.	Population.
St. Peter's Ward...	...	6	9	10	40	9	9	2	30	87	38	125	20	3	118	506	22.45	715	31.73	22531
Park Ward	10	8	39	61	12	8	8	34	88	50	158	26	8	167	677	23.49	873	30.29	28819
Fishwick Ward	7	5	33	55	15	13	4	40	77	32	133	15	10	128	567	22.95	765	30.97	24696
St. John's Ward	11	..	28	14	19	7	1	18	40	21	71	9	2	71	312	22.30	361	25.80	13989
Christ Church Wd.	4	3	5	7	5	2	2	14	36	13	45	7	4	87	234	17.05	285	20.78	13714
Maudland Ward	5	5	5	21	4	1	3	14	38	19	60	9	5	85	274	18.08	411	27.12	15153
Gaol, Infirmary, &c.	1	2	1	1	...	2	...	4	3	1	4	1	17	29	66	...	...	...	...
Total.....	...	44	32	121	199	64	42	20	154	369	174	596	87	49	685	2636	22.16	3410	28.67	118902

Death Rate per annum, per 1000 of the Population for the Year.....22.16

Average Death Rate per annum, per 1000 of Population, for the past six years.. 21.08

Do. Do. for 10 years21.98

Death Rate per annum, per 1000 of Population, of Children under one year..... 6.84

Per centage of Deaths under one year to total Deaths for the Year..... 30.80

Do. Do. for 10 years.....34.93

TABLE No. 4.

Number of Deaths in each Ward during each Month of 1900.

WARDS.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
St. Peter's Ward	40	61	57	42	40	44	22	58	51	33	28	30	506
Park Ward	85	86	72	47	37	40	40	50	82	31	49	58	677
Fishwick Ward	51	62	64	58	28	41	30	48	72	38	28	47	567
St. John's Ward	31	45	45	32	23	12	14	20	32	16	18	24	312
Christ Church Ward	27	35	38	26	13	5	11	21	15	15	11	17	234
Maudland Ward	28	43	20	24	14	20	11	27	24	19	23	21	274
Gaol, Infirmary, &c.	5	10	8	4	5	3	8	8	5	3	2	5	66
Total	267	342	304	233	160	165	136	232	281	155	159	202	2636

TABLE No. 5.

Per Centage of Deaths from Zymotic Diseases to Sickness reported during the Year ending December 31st, 1900.

Disease.	Number of Cases Reported.	No. of Deaths.	Per Centage.
Small Pox .....	...	...	...
Typhoid Fever	162	44	27.16
Scarlet Fever	504	32	6.34
Diphtheria	108	42	38.88

TABLE No. 6.

Substances Submitted for Analysis during the Year 1900.

Name of Article.	No. of Samples.	Result	Name of Article.	No. of Samples.	Result.
New Milk.....	44	Genuine	Linseed Meal	2	Genuine
Cheese	5	"	Arrowroot	2	"
Butter	18	"	Baking Powder ...	4	"
Margarine.....	2	"	Vinegar	1	"
Bread	4	"	Tincture of Rhubarb	1	"
Lard	9	"	Beer	16	"
Golden Syrup	7	"	Whiskey	7	"
Preserves	8	"	Gin	1	"
Ham	1	"	Port Wine	1	"
Coffee	3	"	Liqueur Chocolate	1	"
Pepper	3	"			
New Milk	1	Deficient in cream, but passable			
New Milk.....	1	Do. do.			
New Milk.....	1	2·3 per cent. fat, 9·25 per cent. other solids=11·15 per cent. total solids. Vendor summoned and fined 20/- and costs.			
New Milk	1	2·3 per cent. fat, 8·3 per cent. other solids=10·6 per cent. total solids. Vendor cautioned by Town Clerk.			
New Milk	1	2·5 per cent. fat, 9·19 per cent. other solids=11·69 per cent. total solids. Vendor summoned ; case dismissed upon payment of costs			
New Milk	1	2·51 per cent. fat, 9·38 per cent other solids=11·89 per cent. total solids. Vendor cautioned by Town Clerk.			
New Milk.....	1	2·53 per cent. fat, 8·98 per cent. other solids=11·51 per cent. total solids Vendor summoned ; case dismissed upon payment of costs.			
New Milk.....	1	2·56 per cent. fat, 9·41 per cent other solids=11·97 per cent. total solids Vendor summoned ; case dismissed upon payment of costs.			
New Milk.....	1	2·7 per cent. fat, 8·92 per cent. other solids=11·62 per cent. total solids. Vendor cautioned by Town Clerk.			
Butter	1	Doubtful.			
Butter	1	80 per cent fats other than butter. Summoned and fined 10/-			
Butter	1	75 per cent. butter fat, 20·1 per cent. water, 3·5 per cent. salt, 1·4 per cent. curd. Cautioned by Town Clerk			
Golden Syrup	1	Contained 60 per cent. glucose syrup from starch.			
Golden Syrup	1	Contained 74 per cent. do. do			
Coffee	1	Contained 36 per cent. chicory. Summoned and fined 5/-			
Malt Vinegar	1	Contained under 30 per cent. malt vinegar, and 70 per cent. dilute acetic acid.			
Beer	1	Contained a slight trace of arsenic.			
Beer	1	Contained a small quantity of arsenic.			
Beer	1	Contained a serious quantity of arsenic.			
Whiskey	1	26 per cent. under proof.			
Whiskey ..	1	30·3 per cent. under proof. Summoned and fined 10/- and costs.			

TABLE No. 7.

Contagious Diseases (Animals) Act, 1878.

Name of Disease.	Situation of Premises.	Date of Outbreak.	Number of Diseased Animals.	Number of Healthy Animals in contact with Disease.	Slaughtered by Owner.	Slaughtered by Order of Board of Agriculture.	Number of Visits.
Swine Fever.	Yard behind 111 Friargate.	June 20th, 1900	10	31	...	41	6
Sheep Scab.	Auction Mart, Cattle Market.	August 8th, 1900.	26	232	258	...	4
Swine Fever.	Grimshaw Farm. Ribbleton.	December 29th, 1900	7	2	...	9	4

TABLE No. 8.

Return of Work done by Inspector of Food and Drugs, &c., for year 1900.

Food and Drugs, Samples purchased	.....	.....	155
Food Examined for Preservatives	.....	.....	69
Cow-sheds and Dairies visited	.....	.....	392
Slaughter-houses visited	.....	.....	5450
Meat Condemned and Destroyed	.....	.....	101,744 lbs.
Fish	Do.	.....	8,086 „
Fruit	Do.	.....	760 „

TABLE No. 9.

Birth Rate, and Analysis of the Zymotic Death Rate in 33 of the largest English Towns for the year ending December 31st, 1900. Compiled from the Registrar-General's Returns.

Name of Town.	Population	Birth Rate.	Death Rate.	ZYMOTIC DEATH RATE.								Deaths under one year to 1,000 Births.
				Small Pox	Meas-les.	Scar-let Fever	Diph-theria	Who'p-ing Cough	Fever	Diarr-hœa	Total	
London	4,589,129	28·5	18·7	0 00	0·42	0·07	0·34	0 42	0 16	0·78	2 21	160
West Ham.....	314,472	28 6	15·9	0 00	0·48	0 04	0·50	9·58	0·18	1 30	3·10	188
Croydon.....	131,186	24 9	14·6	0·00	0·15	0·03	0·18	0 43	0 06	0·56	1·43	131
Brighton	124,148	23 5	17·8	0·00	0 43	0 00	0·55	0·28	0 08	0 76	2·21	166
Portsmouth ...	194,955	25·7	17·2	0·00	0 01	0 05	0 53	0·45	0·47	0·84	2·36	156
Plymouth	102,161	27·9	20·8	0·00	0·93	0·01	0 11	0·11	0 20	0·97	2·35	174
Bristol	324,973	27·7	16·6	0 00	0·61	0 11	0·30	0 17	0·13	0 53	1·88	133
Cardiff	194,247	26·8	13·7	0 01	0·83	0 05	0·41	0·20	0·11	0·41	2·06	140
Swansea	105,472	26·6	17·0	0·00	0·63	0 06	0·58	0·15	0·15	0·58	2·16	174
Wolverhampton	89,598	33·5	22·5	0·01	0·81	0 09	0·09	0 79	0·44	1·38	3·64	205
Birmingham ...	519,610	32 7	21·5	0·00	0·25	0·18	0·14	0·57	0 34	1·20	2·70	199
Norwich.....	114,855	28·3	17·5	0 00	0·00	0·00	0·10	0·58	0·12	1·25	2·07	178
Leicester	219,169	28 2	17 4	0 00	0·23	0·13	1·50	0 20	0·11	1·33	3·53	174
Nottingham ...	242,676	27·7	19·0	0·00	0·18	0·22	0·11	0·41	0·32	1·08	2·34	196
Derby	107,991	26·9	17·4	0·00	0·90	0 20	0·06	0·48	0·18	0·47	2 31	174
Birkenhead ...	117,170	29·0	16·8	0 00	0 08	0·02	6·09	0·24	0·14	0·80	1 38	159
Liverpool	634,780	35·9	25·6	0·03	0 23	0·17	0 25	0·84	0 20	1·43	3·17	186
Bolton	164,240	29·0	19 4	0·00	0·23	0·11	0·11	0·52	0·27	1·15	2·42	171
Manchester ...	548,768	32·3	24·1	0 00	0·47	0·19	0·18	0·63	0·13	1·39	3·06	190
Salford	220,816	33·1	25 1	0·00	0 55	0·45	0·41	0·84	0·31	1·41	3·98	207
Oldham	153,297	24·1	19·5	0·02	0·71	0·35	0·13	0·58	0·11	0 53	2·44	172
Burnley	116,730	25·3	16·3	00·0	0·13	0·47	0·18	0·36	0·13	1·22	2·52	205
Blackburn	137,107	25·1	20·4	0·01	0·57	0 61	0·65	0·44	0·22	1 00	3 52	220
Preston	118,902	28·9	24·0	0 00	1·07	0 28	0·38	0·56	0·38	1 67	4·36	236
Huddersfield ...	104,484	22·8	16·8	0·00	0·54	0·16	0·02	0·18	0 18	0·43	1·52	132
Halifax	100,710	22·9	18·1	0·00	0 50	0 17	0·13	0·07	0·22	0·23	1·32	133
Bradford	291,535	23·1	16·4	0·00	0·39	0·25	0·11	0·08	0·22	0·28	1·35	141
Leeds	431,287	30·4	20·0	0·00	0·58	0·12	0·58	0 38	0·19	1·05	2·93	182
Sheffield	365,922	34·1	22·6	0·00	0 54	0·17	1·26	0·55	0·28	1·52	4·33	201
Hull	238,736	32·8	19·7	0·08	0 58	0·16	0·07	0·31	0·21	1·68	3·11	183
Sunderland ...	147,398	35·7	21·4	0 00	0 59	0·26	0·14	0·19	0·37	0 93	2·50	169
Gateshead	109,403	36·2	19·0	0 00	0·13	0·07	0 04	0·55	0 08	0·85	1·75	170
Newcastle	234,369	30·4	19·5	0·00	0·39	0·07	0·13	0 33	0 07	0·37	1·38	170

TABLE No. 10.

Meteorological Observations for the Year ending December 31st, 1903.

Month.	Attached Thermometer.	Barometer.	Barometer corrected to 32deg. Fahr.	Hygrometer.		Temperature in Shade.		Earth Thermometer.		Mean Daily Temperature.	Humidity Saturation=100	Temperature of Town's Water.	Rainfall in inches.	Number of Deaths from	
				Dry Bulb.	Wet Bulb.	Maxi- mum.	Mini- mum.	One Foot	Four Feet.					Bronchitis.	Diarrhoea.
January	39.62	29.752	29.911	40.13	39.19	43.08	35.91	39.70	43.23	39.55	90	41.3	4.82	45	2
February ...	38.39	29.457	29.583	37.21	38.26	41.38	32.86	37.10	40.99	37.14	89	37.9	3.21	73	3
March	38.30	29.860	30.014	39.08	38.10	43.78	34.78	38.74	42.10	39.03	86	40.7	0.64	53	4
April	46.31	29.851	29.983	47.24	45.10	52.74	40.81	43.67	43.89	47.12	84	46.3	1.87	43	1
May.....	51.96	29.874	29.954	52.31	48.56	57.02	44.66	48.42	48.22	51.17	74	52.7	1.88	17	...
June	60.74	29.814	29.869	60.78	56.74	65.94	54.42	54.85	53.60	60.12	75	61.7	2.17	25	4
July	64.07	29.942	29.985	64.42	60.71	69.38	57.85	58.85	56.81	63.84	79	63.6	1.58	14	11
August	60.22	29.849	29.904	60.96	57.72	65.88	53.51	57.45	57.79	60.02	80	60.8	5.70	11	72
September ...	56.20	30.040	30.169	57.14	54.78	62.67	51.13	55.21	56.23	57.05	84	58.3	2.13	20	78
October	50.30	29.829	29.911	50.94	49.16	54.99	45.62	50.02	52.44	50.49	88	50.7	6.31	17	20
November ..	44.71	29.537	29.638	44.96	43.81	48.74	41.56	45.78	49.14	45.13	90	45.4	3.12	17	1
December ...	45.92	29.712	29.809	46.35	45.24	49.85	42.53	45.81	47.89	46.24	91	43.4	3.69	34	3

TABLE No. 11.

Summary of Work done during the Year ending December 31st, 1900.

	No. 1 District	No. 2 District	No. 3 District	No. 4 District	TOTAL.
Number of Ashpails cleansed .....	...	...	...	...	844,251
„ Ashpits „ .....	...	...	...	..	11,092
„ Animals removed	6	10	6	20	42
Number of Complaints received	927	634	527	921	3,009
Inspection of Dwelling Houses	3394	2152	3697	3375	12,618
„ Infected Houses	347	157	243	222	969
„ Lodging Houses	744	395	61	67	1,267
„ Cellars	285	435	229	400	1,349
„ Canal Boats .....	...	43	...	...	43
„ Vans and Tents .....	...	91	97	194	382
„ Schools	139	128	57	119	443
„ Mills and Workshops	425	327	564	471	1,787
„ Dairies and Milkshops .....	...	4	...	...	4
„ Slaughter Houses	66	107	419	119	711
„ Bakehouses	120	258	192	69	639
„ Markets .....	...	217	241	269	727
„ Ashpits and Yards	3976	2342	3740	4385	14,443
„ Drains	4222	2485	3805	5311	15,823
Circular Letters sent .....	...	16	...	13	29
Notices served for Defective Slopstone Pipes.....	14	14	14	11	53
„ Defective Drains	249	212	273	249	983
„ „ Spouts	14	57	20	56	147
„ „ Water Closets	91	139	123	112	465
„ „ Privies & Ashpits... ..	45	87	41	43	216
„ „ Yard Pavement	39	29	46	22	136
„ Overcrowding..... ..	...	...	...	1	1
„ Limewashing	26	120	76	96	318
„ Manure Accumulations	9	10	12	9	40
„ Stagnant Water	11	30	41	43	125
„ General Nuisances	31	36	11	47	125
Smoke Observations .....	...	3	...	10	13
Houses Disinfected	263	196	265	161	885
Schools „	5	14	1	8	28
Bedding „	12	13	10	24	59
House Drains Tested	18	65	39	29	151
School „	2	5	4	8	21
Notices Served to Sewer, Level, Pave, &c.	68	66	...	383	517
„ Flag Yards	52	19	31	32	134
„ Convert Privies into W.C's.	160	145	115	112	532
„ Convert Back to Back Houses	78	33	...	18	129
„ Provide through ventilation ... ..	...	24	...	...	24
„ Close Houses unfit for Habitation	16	46	...	24	86
„ Close Cellar Dwellings	6	...	30	...	36
„ Close Bakehouse ... ..	...	...	...	2	2
Re-inspections	1804	760	1617	2063	6,244

TABLE No. 12.

Return of Port Sanitary Work for the Year ending December 31st, 1900.

Steamships Inspected	.....	.....	.....	.....	796
Sailing Vessels Inspected	.....	.....	.....	.....	168
Re-Inspections	.....	.....	.....	.....	207
Condition of Vessels Inspected	{ Good				786
	{ Defective				178

Defects remedied :—

Paints stored in Forecastle	.....	..	...	.....	.....	6
Forecastle Deck Leaking	.....	.....	.....	.....	.....	2
Do. Dirty	...	.....	.....	.....	.....	45
Do. Required Painting	.....	.....	.....	.....	.....	30
Do. Ventilation and Light Defective	.....	.....	.....	.....	.....	7
Defective Ventilation of Privies and Water Closets	.....	.....	.....	.....	.....	29
Foul and Defective	Do.	Do.	.....	.....	.....	41
Defective Water Casks replaced with Iron Tanks	...	.....	.....	.....	.....	1
Foul Water Casks and Tanks	...	.....	.....	.....	.....	44
Dirty Provision Lockers	...	.....	.....	.....	.....	19
Foul Bilges	.....	.....	.....	.....	.....	12
„ Peaks	...	.....	.....	.....	.....	5
„ Chain Lockers under Forecastle	.....	.....	.....	.....	.....	12

TABLE No. 13.

The estimated Population, Number of Births and Deaths, Rates per thousand, and natural increase in the Borough, for each year since 1841.

Years.	Estimated Population	No of Deaths.	Death Rate per 1000.	No. of Births.	Birth Rate per 1000	Natural Increase
1841	51 000	1508	29.57	1974	38.70	466
1842	52 840	1550	29.33	1944	36.79	394
1843	54,680	1459	26.38	1975	36.12	516
1844	56,520	1380	24.42	2200	38.92	820
1845	58,360	1635	28.01	2293	39.29	558
1846	60,200	2189	36.36	2475	41.09	286
1847	62,050	2059	33.18	2268	36.59	209
1848	63,900	1550	24.26	2223	34.79	673
1849	65,750	1751	26.63	2403	36.55	652
1850	67,000	1745	25.81	2649	39.19	904
1851	69,450	2241	32.26	2803	40.36	562
1852	70,850	2284	32.23	2998	42.31	714
1853	72,250	2346	32.47	3072	42.51	726
1854	73,600	2013	27.35	3037	41.26	1024
1855	75,000	2557	34.10	3071	40.95	514
1856	76,400	2251	29.46	3151	41.24	900
1857	77,800	2131	27.39	3286	42.24	1155
1858	79,200	2545	32.13	3082	38.91	537
1859	80,600	2111	26.19	3399	42.17	1288
1860	82,000	2236	27.27	3381	41.23	1145
1861	82,985	2585	31.15	3626	43.69	1041
1862	83,231	2411	28.97	3522	42.32	1111
1863	83,477	2142	25.66	3388	40.57	1246
1864	83,686	2432	29.06	3422	40.89	990
1865	83,932	2708	32.26	3338	39.77	630
1866	84,178	2854	33.90	3535	41.99	681
1867	84,424	2608	30.89	3732	44.20	1124
1868	84,670	2798	33.04	3710	43.82	912
1869	84,916	2248	26.47	3434	40.44	1186
1870	85,162	2406	28.25	3486	40.93	1080
1871	85,427	2541	29.75	3438	40.24	897
1872	85,654	2294	26.78	3704	43.24	1410
1873	86,000	2899	33.71	3558	41.37	659
1874	86,000	2962	34.44	3582	41.65	620
1875	86,000	2581	30.01	3499	40.68	918
1876	86,600	2331	26.92	3623	41.84	1292
1877	87,000	2336	26.85	3601	41.39	1265
1878	87,300	2502	28.66	3697	42.35	1195
1879	87,600	2395	27.34	3403	38.83	1068
1880	88,000	2425	27.35	3475	39.49	1050
1881	96,524	2044	21.17	3489	36.14	1445
1882	97,656	2511	25.71	3785	38.76	1214
1883	98,564	2345	23.79	3576	36.28	1231
1884	99 481	2540	25.53	3745	37.64	1205
1885	100,406	2563	25.52	3868	38.52	1305
1886	101,340	2769	27.32	3961	39.08	1192
1887	102,283	2703	26.42	3870	37.83	1167
1888	103,234	2326	22.53	3823	37.03	1497
1889	104,194	3019	28.97	3912	37.63	902
1890	105,163	2726	25.92	3718	35.35	992
1891	107,864	2807	26.02	3830	35.50	1023
1892	109,038	2481	22.75	3686	33.80	1205
1893	110,225	2753	24.97	3809	34.55	1056
1894	111,425	2186	19.61	3545	31.81	1359
1895	112,638	2528	22.44	3702	32.95	1174
1896	113,864	2191	19.24	3673	32.25	1482
1897	115,103	2687	23.34	3687	32.03	1000
1898	116,356	2107	18.10	3559	30.58	1452
1899	117,622	2492	21.18	3492	29.68	1000
1900	118,902	2636	22.16	3410	28.67	774

TABLE 1A.
For whole District.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.		DEATHS UNDER 1 YEAR OF AGE.		DEATHS AT ALL AGES. TOTAL.		Deaths in Public Institutions.	Deaths of Residents registered beyond District. (Work-house.)	DEATHS AT ALL AGES. NETT.	
		Number	Rate.*	Number	Rate per 1,000 Births registered.	Number	Rate.*			Number	Rate.*
1890.	105,163	3718	35.35	923	245	2726	25.92	82	144	2870	27.29
1891.	107,864	3830	35.50	892	227	2807	26.02	61	177	2984	27.66
1892.	109,038	3686	33.80	805	216	2481	22.75	55	190	2671	24.49
1893.	110,225	3809	34.55	1032	268	2753	24.97	48	150	2903	26.33
1894.	111,425	3545	31.81	770	217	2186	19.61	56	129	2315	20.77
1895.	112,638	3702	32.95	927	249	2528	22.44	81	161	2689	23.87
1896.	113,864	3673	32.25	760	204	2191	19.24	58	151	2342	20.56
1897.	115,103	3687	32.03	954	263	2687	23.34	63	166	2853	24.78
1898.	116,356	3559	30.58	812	221	2107	18.10	81	138	2245	19.29
1899.	117,622	3492	29.68	889	255	2492	21.18	85	181	2673	22.72
Averages for years 1890-1899.	111,929	3670	32.85	876	236	2495	22.35	67	158	2654	23.77
1900.	118,902	3410	28.67	814	236	2636	22.16	66	200	2836	23.85

*Rates calculated per 1,000 of estimated population.

Area of District in acres (exclusive of Area covered by water) } 3,721.

Total population at all ages.....107864

Number of inhabited houses 22342

Average number of persons per house 4.81

At Census of 1891

TABLE 2A.

NAMES OF LOCALITIES.		1.—ST. PETER'S WARD.				2.—PARK WARD.				3.—FISHWICK WARD.				4.—ST. JOHN'S WARD.				5.—CHRIST CHURCH WARD.				6.—MAUDLAND WARD.				7.—INSTITUTIONS.		
YEAR.		Population esti- mated to middle of each Year.	Births Registered.	Deaths at all ages.	Deaths under 1 year.	Population esti- mated to middle of each Year.	Births Registered.	Deaths at all ages.	Deaths under 1 year.	Population esti- mated to middle of each Year.	Births Registered.	Deaths at all ages.	Deaths under 1 year.	Population esti- mated to middle of each Year.	Births Registered.	Deaths at all ages.	Deaths under 1 year.	Population esti- mated to middle of each year.	Births Registered.	Deaths at all ages.	Deaths under 1 year.	Population esti- mated to middle of each Year.	Births Registered.	Deaths at all ages.	Deaths under 1 Year.	Births Registered.	Deaths at all ages.	Deaths under 1 year.
1890	...	19,570	804	499	192	27,167	929	710	270	19,182	833	564	224	13,459	359	319	110	13,310	388	251	70	12,475	405	301	51	...	82	6
1891	...	20,145	798	601	211	27,892	937	740	227	19,782	882	570	214	13,582	413	301	101	13,510	351	274	52	12,953	449	260	85	...	61	2
1892	...	20,674	767	480	146	26,293	920	617	224	22,517	825	579	204	12,921	423	326	110	12,914	302	201	55	13,719	446	223	66	3	55	...
1893	...	20,911	815	543	228	26,593	876	695	254	22,767	912	594	254	13,071	394	284	116	12,989	372	288	85	13,894	440	301	98	...	48	1
1894	...	21,151	772	412	166	26,903	813	531	188	23,037	802	479	206	13,171	385	289	91	13,109	358	231	62	14,054	411	190	54	4	56	3
1895	...	21,396	820	505	204	27,228	891	651	245	23,337	838	555	223	13,271	441	331	116	13,209	308	215	65	14,197	403	218	72	1	81	2
1896	...	21,606	794	417	158	27,892	905	617	232	23,597	798	439	160	13,426	413	275	95	13,314	348	212	56	14,376	412	193	57	3	58	2
1897	...	21,831	792	546	218	27,898	934	647	241	23,886	798	568	218	13,526	434	316	100	13,389	331	247	84	14,573	392	246	88	6	63	5
1898	...	22,081	758	362	155	28,203	905	567	251	24,186	805	446	188	13,679	395	248	82	13,464	300	188	53	14,743	393	215	77	3	81	6
1899	...	22,281	719	444	165	28,509	897	623	248	24,426	773	526	211	13,839	407	309	109	13,614	302	237	76	14,953	389	268	75	5	85	5
Averages of Years 1890 to 1899		21,164	783	480	184	27,457	900	639	238	22,671	826	532	210	13,394	406	299	103	13,282	336	234	65	13,993	414	241	72	2	67	3
1900	...	22,531	715	506	179	28,819	873	677	214	24,696	765	567	184	13,989	361	312	96	13,714	285	234	55	15,153	411	274	77	...	66	...

TABLE 3A.

Cases of Infectious Disease notified during the Year 1900.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.							TOTAL CASES NOTIFIED IN EACH LOCALITY.						NO. OF CASES REMOVED TO HOSPITAL FROM EACH LOCALITY.					
	At all Ages.	At Ages—Years.						St. Peter's Ward.	Park Ward.	Fishwick Ward.	St. John's Ward.	Christ Church Ward.	Maudland Ward.	St. Peter's Ward.	Park Ward.	Fishwick Ward.	St. John's Ward.	Christ Church Ward.	Maudland Ward.
		Under 1.	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards												
Small-pox ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria	108	4	49	39	7	9	...	21	16	38	18	7	8	...	...	...	...	...	1
Membranous Croup	7	2	4	1	...	...	...	...	3	4	...	...	...	...	...	...	...	...	..
Erysipelas	58	1	2	7	4	44	...	16	10	13	9	4	6	...	...	...	...	...	...
Scarlet Fever	504	1	180	291	23	9	...	146	130	58	26	48	96	4	4	1	2	...	...
Typhus Fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever	162	...	13	45	45	59	...	33	30	35	31	19	14	...	...	...	...	...	...
Relapsing Fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Continued Fever	12	1	4	4	...	3	...	2	...	5	...	...	5	...	...	...	...	...	...
Puerperal Fever	8	...	...	...	...	...	...	...	4	1	1	1	1	...	...	...	...	...	...
Plague ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	859	9	252	387	79	124	...	218	193	154	85	79	130	4	4	1	2	...	1

TABLE 4A.
Causes of, and Ages at, Death during Year, 1900.

Causes of Death.	Deaths in whole District at subjoined Ages.							Deaths in Localities (at all ages).							Deaths in Public Institutions.
	All Ages.	Under 1.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	St. Peter's Ward.	Park Ward.	Fishwick Ward.	St. John's Ward.	Christ Church Ward.	Maudland Ward.	Work-house.	
Small-pox .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	121	31	81	7	2	...	...	10	39	33	28	5	5	...	1
Scarlet Fever	32	1	21	8	2	...	...	9	8	5	...	3	5	...	2
Whooping Cough	64	24	37	2	1	...	...	9	12	15	19	5	4	...	...
Diphtheria and Membranous Croup	42	3	33	6	...	...	...	9	8	13	7	2	1	...	2
Croup	20	4	14	2	...	...	...	2	8	4	1	2	3	...	...
{ Typhus .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever { Enteric	42	...	2	13	13	14	...	5	10	7	11	4	4	1	1
{ Other continued	2	1	...	...	...	...	1	1	...	...	...	...	1	...	...
Epidemic Influenza	75	6	3	2	3	42	19	12	16	14	12	16	5	12	...
Cholera ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhœa	199	156	30	...	1	7	5	40	61	55	14	7	21	...	1
Enteritis	25	17	2	2	...	4	...	8	5	5	3	3	1	...	...
Puerperal Fever	2	...	...	...	...	2	...	...	1	1	...	...	...	1	...
Erysipelas	8	1	...	...	1	4	2	1	2	2	1	1	1	2	...
Other Septic Diseases	2	1	1	...	...	...	...	1	1	...	...	...	...	...	...
Phthisis	154	1	4	12	30	106	1	30	34	40	18	14	14	14	4
Other Tubercular Diseases	113	61	25	13	5	8	1	24	33	27	8	4	13	...	4
Cancer, Malignant Disease ...	69	1	...	...	...	51	17	15	14	13	5	10	9	11	3
Bronchitis	369	97	61	9	5	101	96	87	88	77	40	36	38	28	3
Pneumonia	174	24	41	4	10	83	12	38	50	32	21	13	19	10	1
Pleurisy... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Respiratory organs	3	...	...	2	...	1	...	...	1	1	...	1	...	...	...
Alcoholism	35	...	...	...	1	30	4	7	8	2	3	3	9	4	3
Cirrhosis of Liver }															
Venereal Diseases	6	4	2	...	...	...	...	1	2	2	1	...	...	...	...
Premature Birth	65	65	...	...	...	...	...	22	9	10	15	2	7	...	...
Diseases and accidents of Parturition	11	...	...	...	2	9	...	3	2	2	..	2	2	...	...
Heart Diseases	169	5	3	7	10	99	45	30	43	39	22	13	16	20	6
Accidents	44	6	5	5	5	16	7	2	7	9	2	4	3	...	17
Suicides	6	...	...	1	1	4	...	1	2	1	...	...	2	...	...
Old Age	90	...	...	...	...	3	87	20	26	15	10	9	9	37	1
All other causes	694	296	89	20	33	164	92	122	183	141	72	75	84	60	17
All causes	2636	805	454	115	125	748	389	509	673	565	313	234	276	200	66

Infantile Mortality.
1900.



Infantile Diarrhoea, 1900.

The Red Spots • indicate Deaths from Diarrhoea under
the age of one Year.



Zymotic Diseases, 1900.

The Red Spots • indicate Deaths from Scarlet Fever,
The Blue Spots • indicate Deaths from Typhoid Fever,
The Yellow Spots • indicate Deaths from Diphtheria.

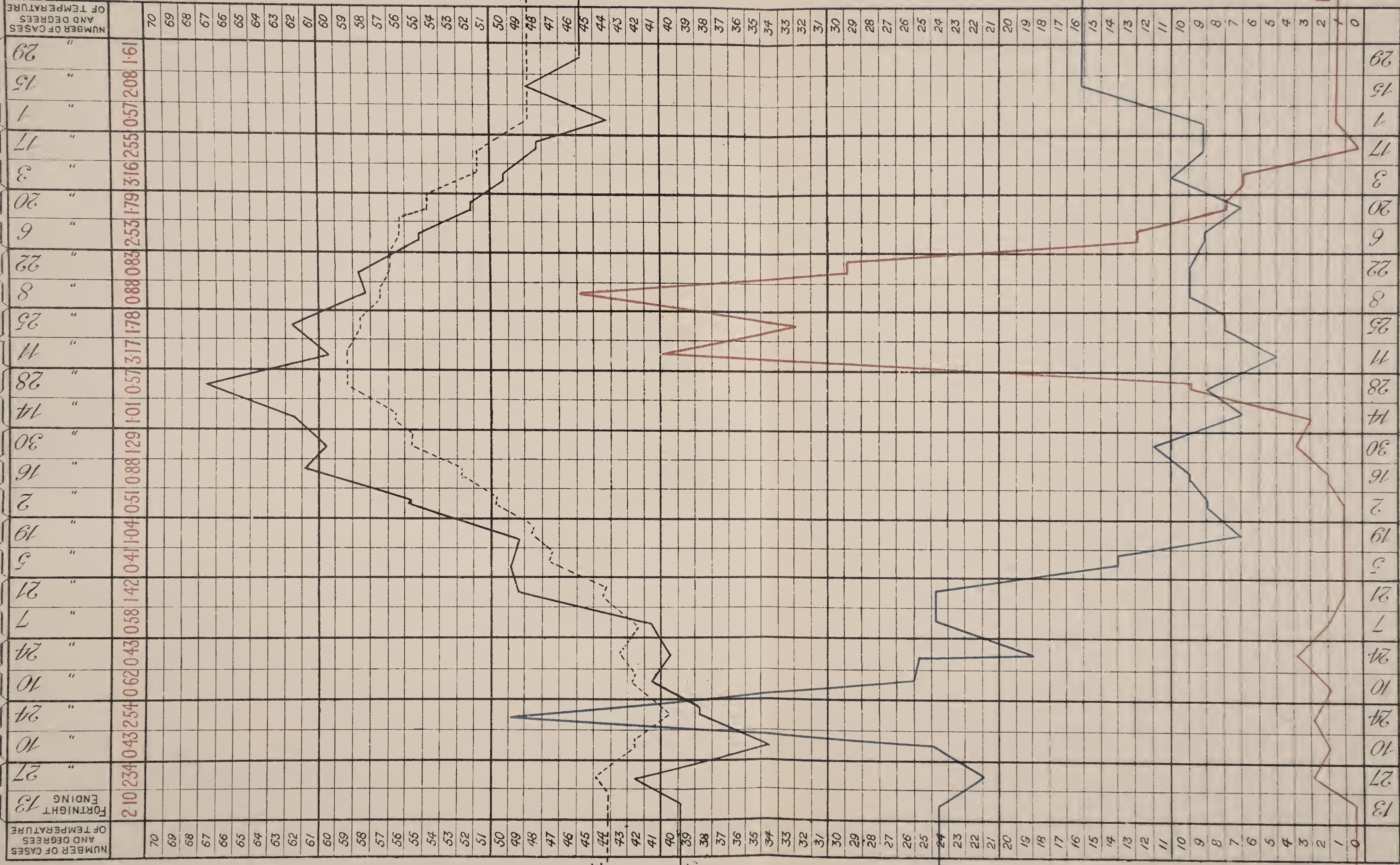


Portions Coloured Red indicate
Property reported upon and im-
proved during the year 1900.

Those in lighter shade indicate
blocks dealt with during previous
sixteen years.



JAN. FEB. MAR. APR. MAY. JUN. JUL. AUG. SEP. OCT. NOV. DEC.



RAINFALL
IN INCHES

RAINFALL
IN INCHES

EARTH TEMPERATURE
4 FT.

EARTH TEMPERATURE
4 FT.

MEAN DAILY
TEMPERATURE

MEAN DAILY
TEMPERATURE

MORTALITY FROM
BRONCHITIS.

MORTALITY FROM
BRONCHITIS.

MORTALITY FROM
DIARRHOEA

MORTALITY FROM
DIARRHOEA

